Nuclear Medicine Technician

NEC HM-8416

Nuclear Medicine 101

- Personnel in Product Line
- Equipment

Equipment

This is the type of gamma camera used in clinic.

Key Objectives

- What is Nuclear Medicine?
- Fast Facts about Nuclear Medicine
- Fiction about Nuclear Medicine
- Terminology Commonly Used
- Why do Physicians order Nuclear Medicine Studies?
- Study Images
- Future of Nuclear Medicine

What is Nuclear Medicine?

- **A medical specialty that uses safe, painless, and cost-effective techniques both to image the body and treat disease.**
- **It is unique in that it documents organ function and structure.**
- **It is used in the diagnosis, management, treatment, and prevention of serious disease.**

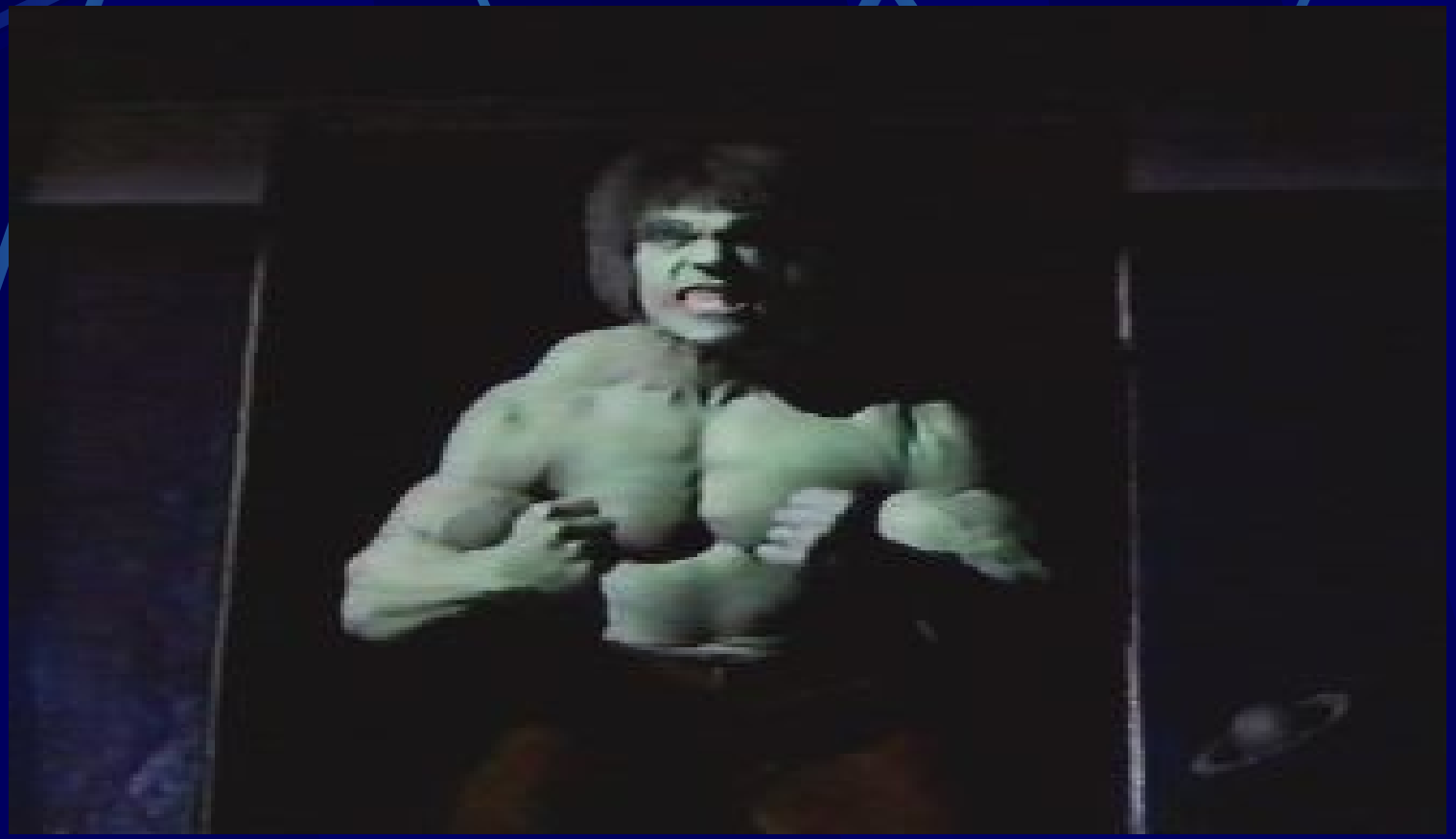
Fast Facts about Nuclear Medicine

- **There are nearly 100 different nuclear medicine imaging procedures.**
- **The amount of radiation is comparable to that received during a diagnostic x-ray.**
- **Common applications include diagnosis and treatment of hyperthyroidism (Grave's Disease).**

More Facts about Nuclear Medicine

- **Cardiac stress tests to analyze heart function, bone scans for orthopedic injuries, lung scans for blood clots, and liver and gall bladder procedures to diagnose abnormal function or blockages.**
- **Children commonly undergo studies to evaluate bone pain, infection, and function of major organs.**

Fiction about Nuclear Medicine



Terminology

- **Radiopharmaceutical - The basic radioactivity tagged compound necessary to produce an image.**
- **Gamma Camera - The basic instrument used to produce an image.**
- **SPECT - Provides 3-D computer-reconstructed images of multiple views and function of the organ.**

Why order Nuclear Medicine Studies

Partial Listing:

Neurologic Applications:

- **Diagnose Stroke**
- **Diagnose Alzheimer's Disease**

Oncologic Applications:

- **Identify Metastatic Sites**
- **Relieve Bone Pain Caused by Cancer**

Renal Applications:

- **Detect Pyelonephritis**
- **Detect Renal scars**

Cardiac Applications:

- **Diagnose Coronary Artery Disease**
- **Identify Patients at High Risk of Heart Attacks**

Other Applications:

- **Detect Acute Gastrointestinal Bleeding**
- **Diagnose Pulmonary Emboli**
- **Detect Testicular Torsion**
- **Diagnose/Treat Blood Cell Disorders**

Duty Locations

- NMC-San Diego, CA
- NNMC-Bethesda, MD
- NMC-Portsmouth, VA
- NH-Jacksonville, FL
- NH-Pensacola, FL
- NH-Great Lakes, IL
- NH-Bremerton, WA
- NACC- Groton, CT
- NACC-Newport, RI
- NH-Lejeune, NC
- NH-Pendelton, CA
- NH Okinawa
- NH-Guam (this is the only sea duty billet available for Nuclear Medicine Technicians)
- No sea duty such as FMF or shipboard billets available.

School Overview

- **Located at NSHS Portsmouth, VA**
- **13 months “total” duration**
- 5 months didactic (classroom work)
- 8 months clinical rotations to be completed at either of the following locations:
  - **NMC-Portsmouth, VA**
  - **NMC-San Diego, CA**
  - **NNMC-Bethesda, MD**

Prerequisites

- Paygrades E-4 to E-6
- Copy of performance evaluations for the past 3 years. Must include at least one evaluation prepared by the applicant's current command.
- Copy of service record pages 3/4, 5 and 9 (Page 3/4 should reflect the grade/score of the required courses with a grade of "C" or better/score of not less than 3.0.)

Prerequisites

- To enhance selection opportunity, an interview is desired (but not required) with a Nuclear Medicine Technologist or, if not available, with a senior medical department representative, preferably within the same or related clinical or technical specialty

Prerequisites

- Current Ionizing Radiation medical examination (SF-88/93) with required enclosures per MANMED and NAVMED P-5055
- No non-judicial punishment, court martial or civil court action in the past 3 years

Prerequisites

- Completed an algebra course with a grade of "C" or better within the last 36 months or have successfully completed an algebra CLEP examination within 36 months of application to the program

Prerequisites

- Have completed two courses in physical sciences with a grade of "C" or better, of which one course of physical science may be substituted with an advanced mathematics course such as algebra II, statistics, geometry, calculus, etc
- Supplemental courses of this nature are highly encouraged, but not required.

Prerequisites

- Must be physically qualified for transfer per MANMED and TRANSMAN.
- Applicant must be fully qualified to perform all duties required of the NEC worldwide: wherever a billet or a mobilization requirement exists

Prerequisites

- Desired or qualified HM-8451 and HM-8452 applicants who have performed within a radiology department. However, other highly qualified applicants who have completed high school or college algebra with a grade of "C" or better and/or completion of NAVEDTRA 10069-D series within two years of class convening are encouraged to apply

Certifications

- **Upon successful graduation from the school, students are eligible to sit the registry exam administered by the Nuclear Medicine Technology Certification Board (NMTCB) or American Registry of Radiologic Technologists (ARRT).**

The Future of Nuclear Medicine

- The development of new radiopharmaceuticals for diagnostic and therapeutic purposes.
- Promising research and development of cancer-detecting and cancer-killing agents, such as genetically engineered antibodies.

The Future of Nuclear Medicine

- The expanding clinical use of exciting new technology know as Positron Emission Tomography (PET) and Positron Coincidence Detection (PCD), which provide new and unique means of studying biochemistry and metabolism within living tissues.

PATIENT NAME : [redacted]
PATIENT ID : [redacted]
BIRTH DATE :

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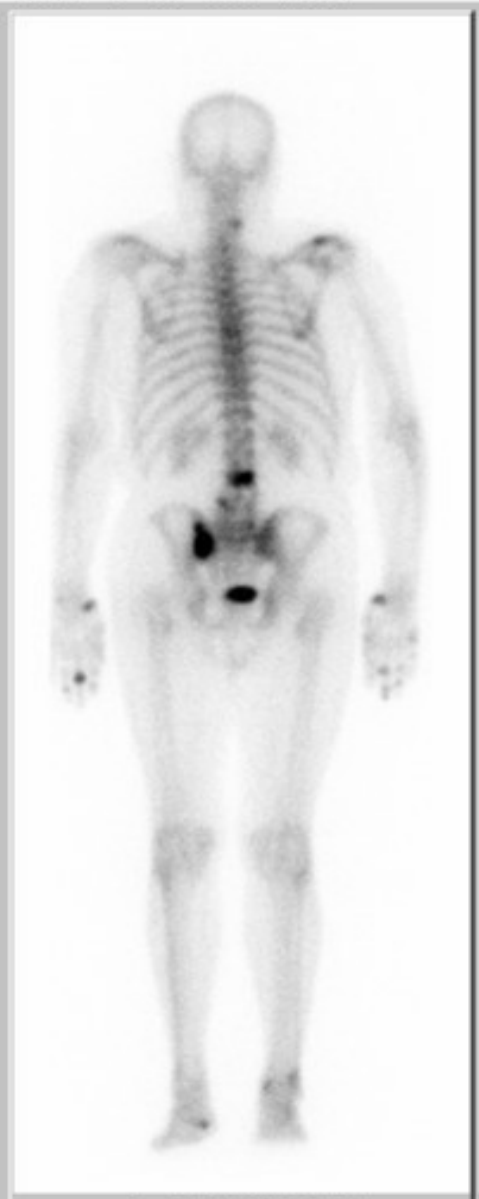
INSTITUTE : NAVAL MEDICAL CENTER, PORTSMOUTH, VA
PROTOCOL : WHOLE BODY DUAL INTENSITY
ACQ. DATE : 08-MAR-2001



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Dose:20.0 mCi TCMDP Time post inj.: 3 hrs

Counts: 2824553

PATIENT NAME : [redacted]
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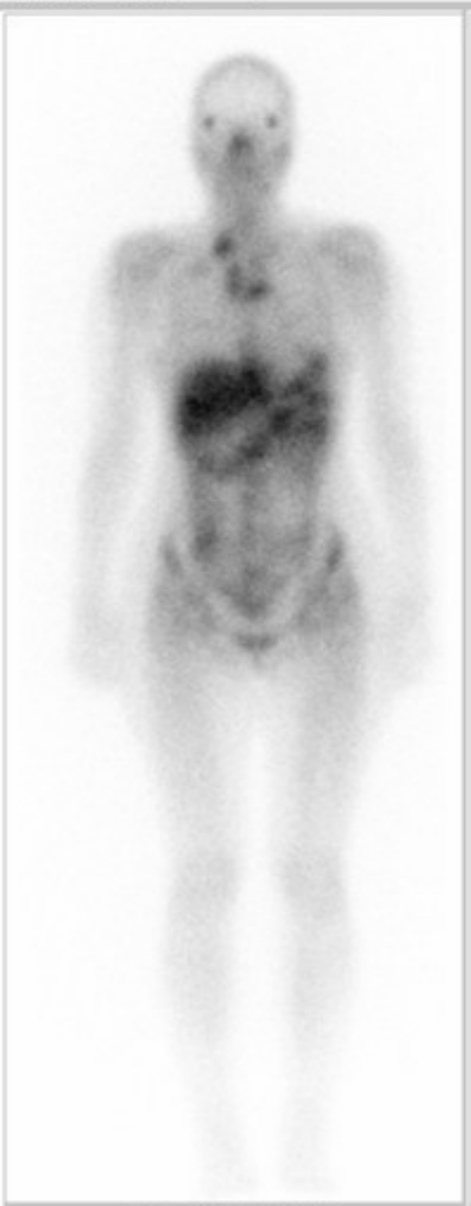
BIRTH DATE :

INSTITUTE : NAVAL MEDICAL CENTER, PORTSMOUTH, VA
PROTOCOL : WHOLE BODY DUAL INTENSITY
ACQ. DATE : 19-JAN-2001



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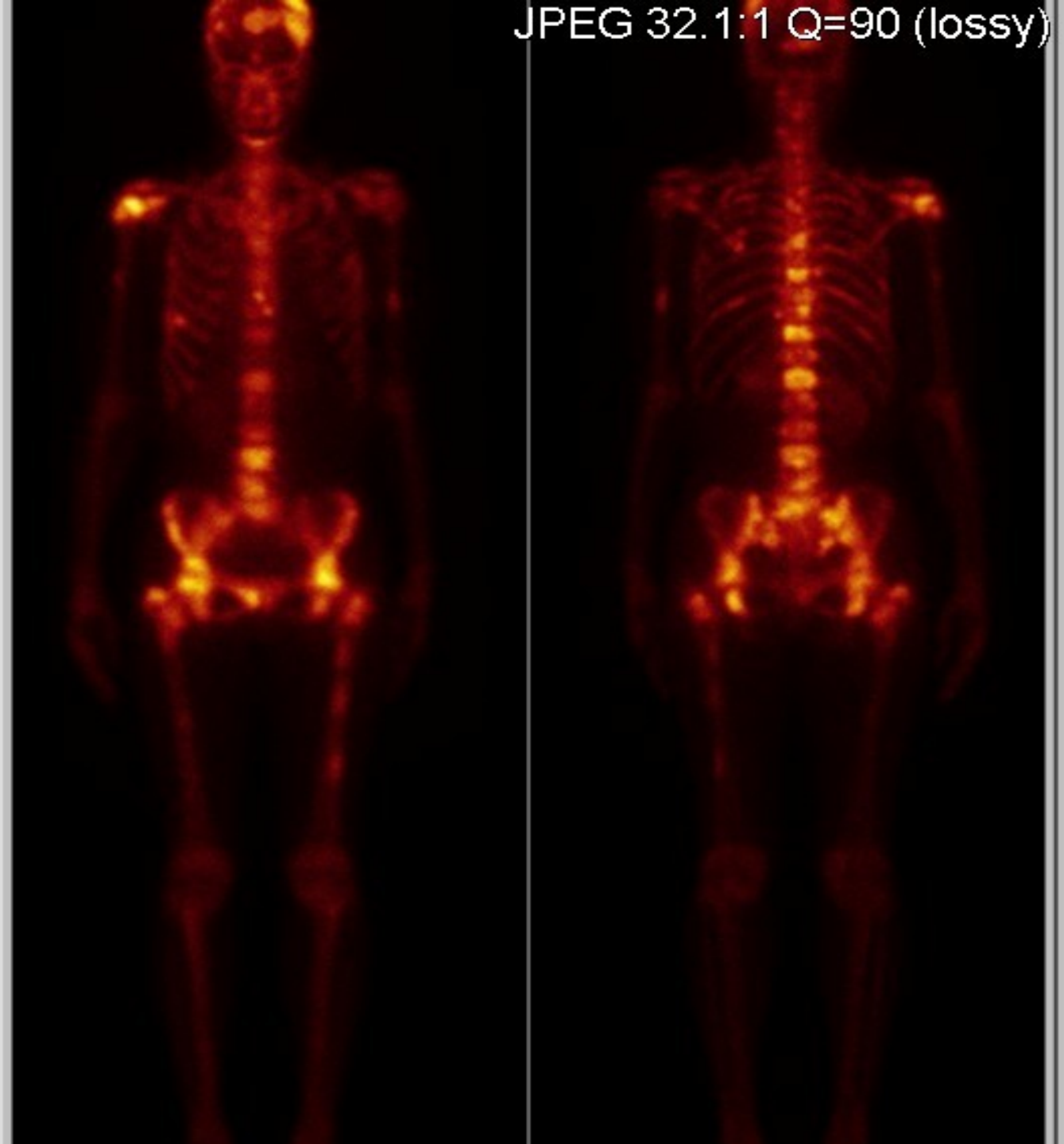
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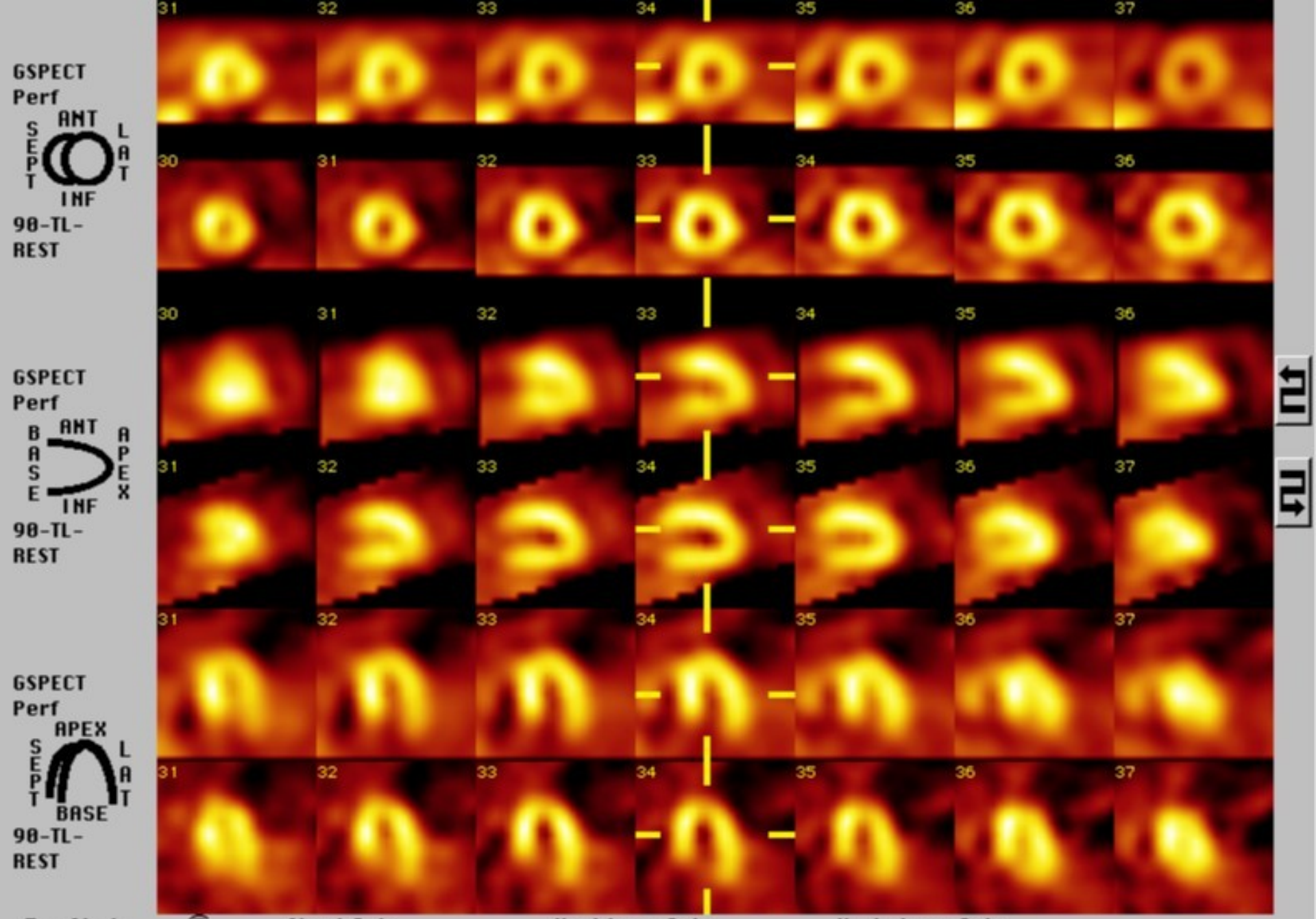
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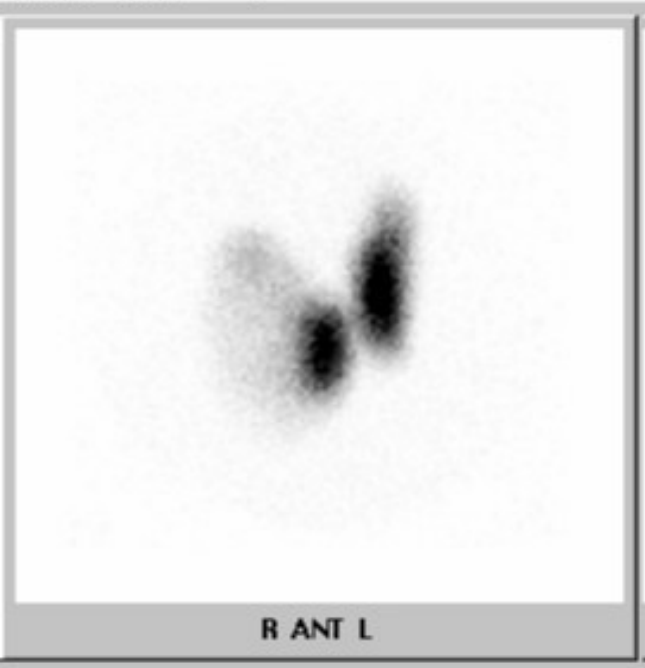
PATIENT NAME : [redacted]
PATIENT ID : [redacted]
BIRTH DATE :

INSTITUTE : NAVAL MEDICAL CENTER , PORTSMOUTH, VA
PROTOCOL : MULTI STATIC DISPLAY
ACQ. DATE : 14-FEB-2001



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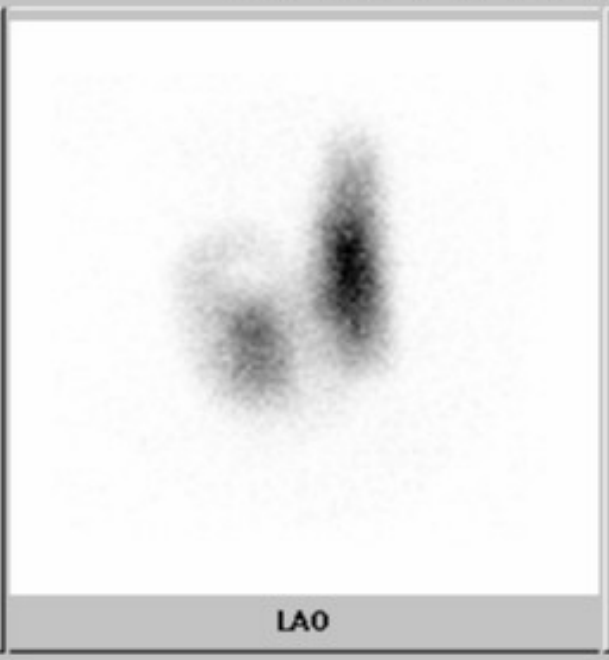

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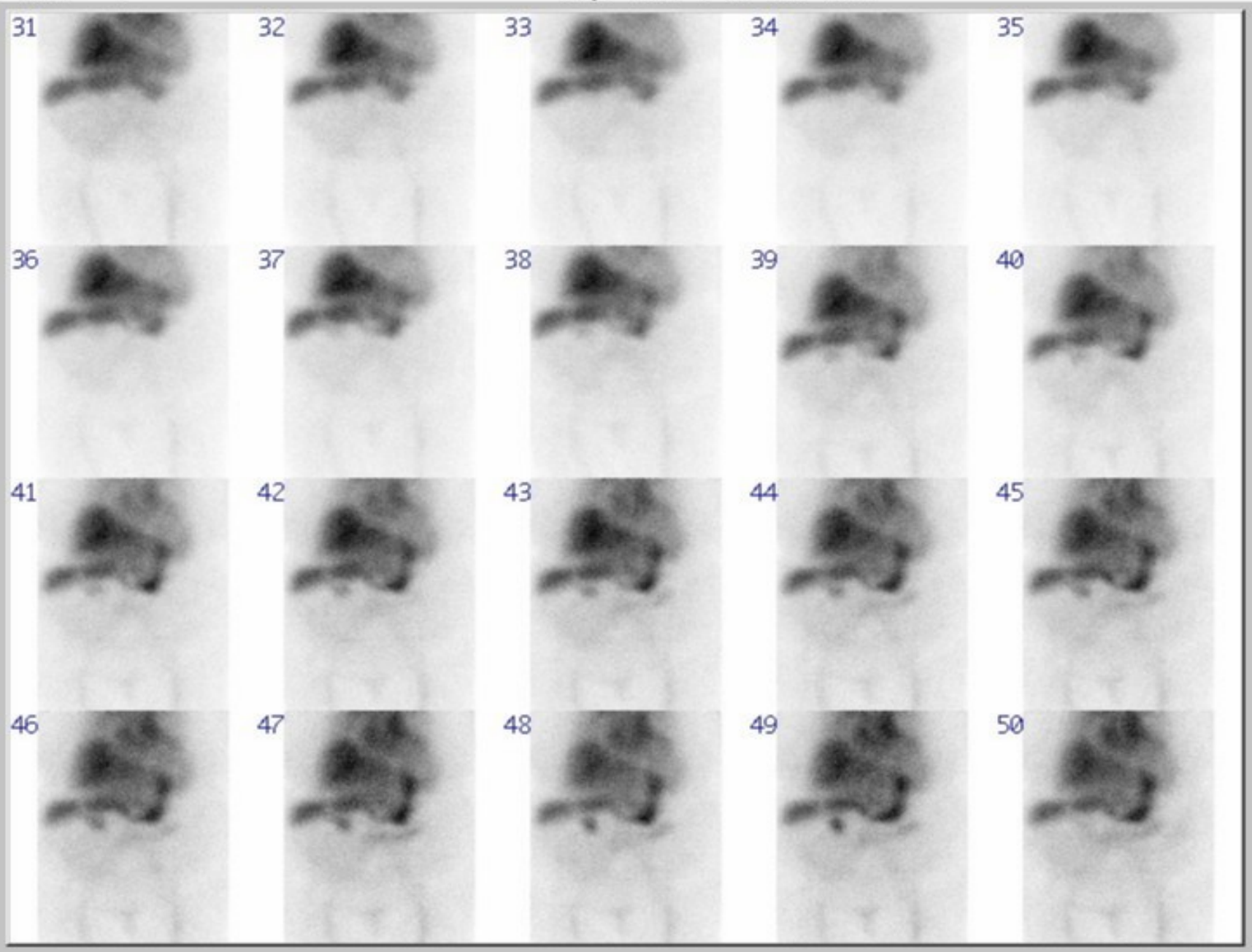
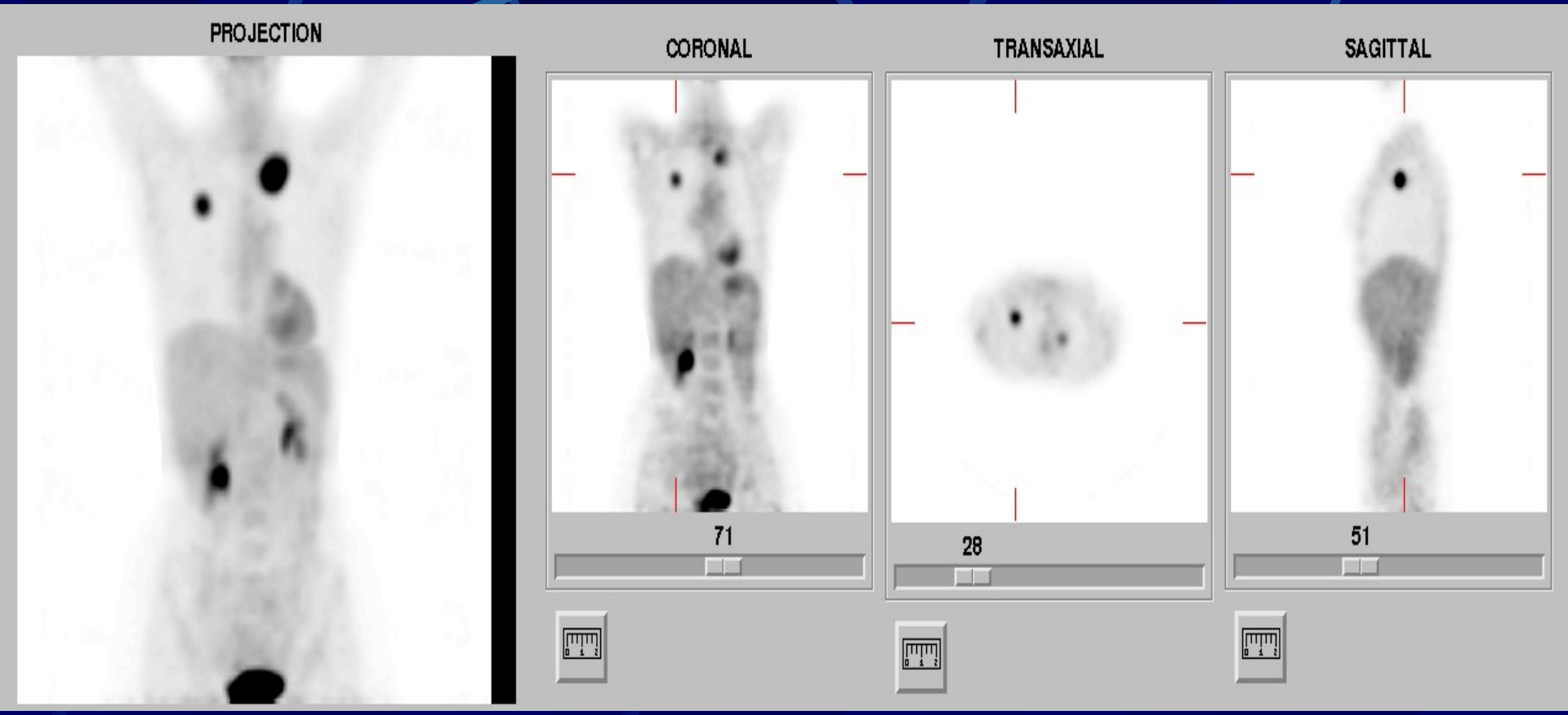
INSTITUTE : NAVAL MEDICAL CENTER , PORTSMOUTH, VA
PROTOCOL : GENERAL IMAGE DISPLAY
ACQ. DATE : 30-JAN-2001

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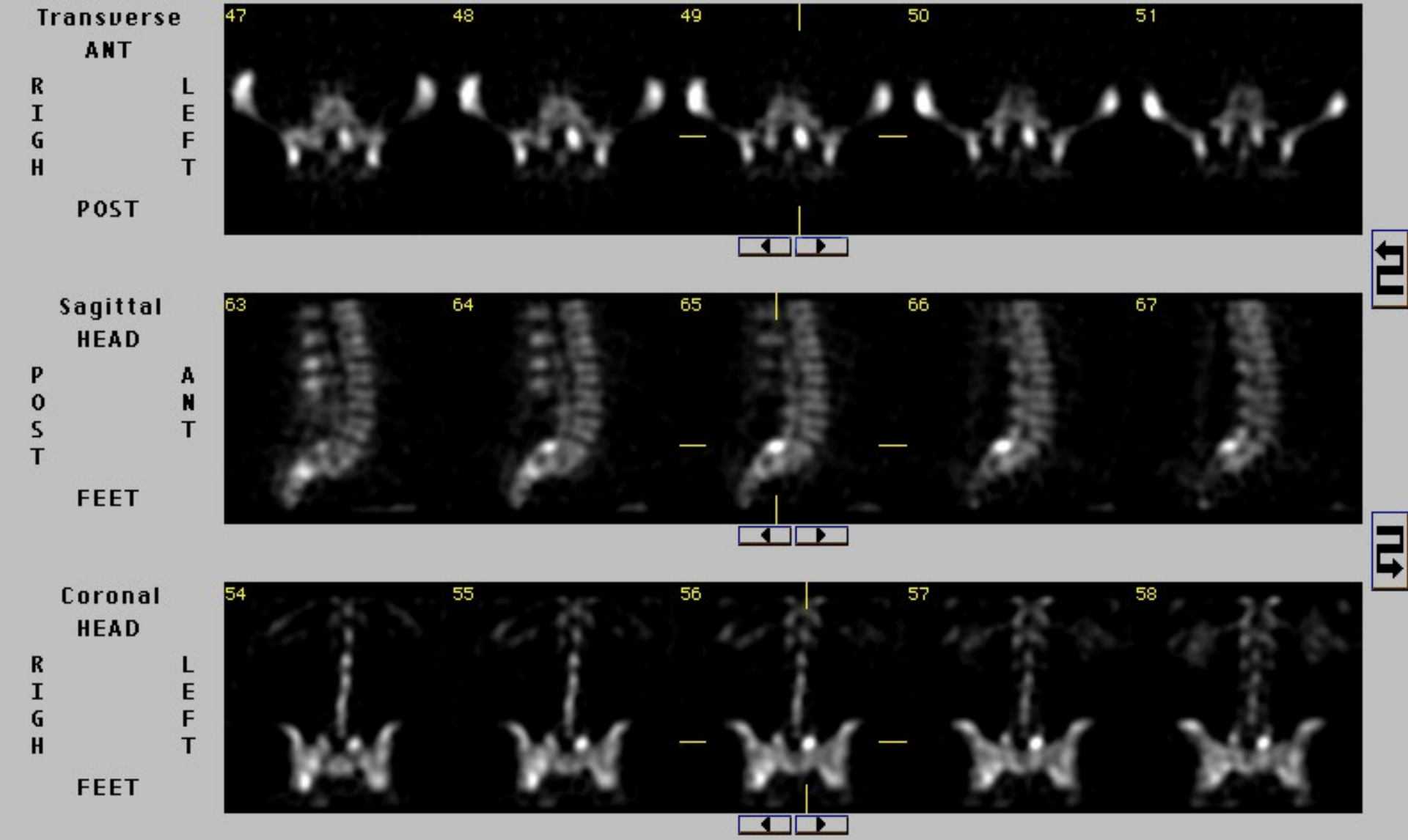
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The End

- **Created by HM1 Navarro, HM-8416 Enlisted Technical Leader.**
- **If you have more questions, please contact your Command Career Counselor or the HM “C” Schools Detailer at DSN: 882-3809**